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BEFORE THE BOARD OF PATENT APPEALS

AND INTERFERENCES

Paper No. 26

Application Number: 09/429,719

Filing Date: October 29, 1999

Appellant(s): Aratani et al.

Shashank Upadhye

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed December 30, 2002.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

Claims 17, 18 and 20 will remain rejected under the combination of Hatwar et al. in view of Takeoka and further in view of Ohno et al. It should be noted that Applicant filed an after final Amendment which the Examiner entered. In that Advisory Action the Examiner indicated that claims 17, 18 and 20 would be rejected over Hatwar et al. in view of Takeoka et al. and further in view of Ohno et al. Appellant had moved the limitation of previously pending claim 19 into independent claim 17. Ohno was relied upon to teach the limitation of previously pending claim 19. Therefore, Ohno would be needed in combination with Hatwar et al. in view of Takeoka to teach the limitation added to claim 17.

The rejection to claims 21-24 will be withdrawn given that the prior art of record is silent on the AgPdTi alloy comprising Pd in an amount ranging from 0.1 to 1.5 atomic%, Ti in an amount ranging from 0.1 to 2.9 atomic %, and Cu in an amount ranging from 0.1 to 3.5 atomic%.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows:

Claims 17, 18 and 20 are rejected under section 103(a) as being unpatentable over Hatwar (U.S. Pat. 5,948,497) in view of Takeoka (U.S. Pat. 4,647,947) and further in view of Ohno (U.S. Pat. 6,004,646).

The rejection to claim 19 is not applicable because the Examiner entered the After Final Amendment of July 29, 2002 in which claim 19 was canceled and the limitations of claim 19 were added to claim 17. This resulted in the Examiner stating in the Advisory Action that claims 17, 18 and 20 would be rejected over Hatwar (U.S. Pat. 5,948,497) in view of Takeoka (U.S. Pat. 4,647,947) and further in view of Ohno (U.S. Pat. 6,004,646). Ohno (U.S. Pat. 6,004,646) being needed to address the new claim limitation of claim 17 which was from previously pending claim 19.

The rejection to claims 21-24 are not at issue since the rejections to these claims have been withdrawn as discussed above.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 17, 18 and 20 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

It should be noted that claim 19 has been canceled and that the rejections to claims 21-24 are withdrawn.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

6,004,646	Ohno et al.	12-1999
5,948,497	Hatwar et al.	9-1999
4,647,947	Takeoka et al.	3-1987

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 17, 18 and 20 are rejected under 35 U.S.C. 103 as obvious over Hatwar (U.S. Pat. 5,948,497) in view of Takeoka (U.S. Pat. 4,647,947) and further in view of Ohno (U.S. Pat. 6,004,646).

This rejection is set forth in prior Office Action, Paper No. 22 and 20 and is discussed in full below. It should be noted that in Paper No. 22, the Advisory Action, the Examiner stated that Claims 17, 18 and 20 would be rejected over Hatwar (U.S. Pat. 5,948,497) in view of

Takeoka (U.S. Pat. 4,647,947) and further in view of Ohno (U.S. Pat. 6,004,646). Ohno was needed to address the newly added limitation of claim 17 which came from previously pending claim 19. In paragraph 3 of Paper 20 such a rejection is made (i.e. Claims 19 (now canceled) and 20 are rejected under 35 U.S.C. 103 as being unpatentable over Hatwar et al. in view of Takeoka et al. as applies to claims 17 and 18 above, and further in view of Ohno (U.S. Pat. 6,004,646)). This rejection clearly addresses pending claims 17, 18 and 20 with the combination of Hatwar in view of Takeoka and further in view of Ohno.

Claims 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatwar et al.(U.S. Pat. 5,948,497) in view of Takeoka et al. (U.S. Pat. 4,647,947) and further in view of Ohno et al. (U.S. Pat. 6,004,646).

Hatwar et al. teach a reflecting layer that is a silver-palladium alloy, a silver-copper alloy or a silver-palladium-copper alloy. By maintaining the palladium component of the alloy less than 15 atomic % and the copper component of the alloy less than 30 atomic % the reflectance of the reflecting layer can be similar to the typical gold reflecting layer. (See Abstract)

The alloy thin films were prepared by co-sputtering silver and palladium and/or copper using d.c. magnetron guns in argon atmosphere. (Column 2 lines 33-35)

Complete compact disks were fabricated using silver alloys and gold films approximately 1000 Angstroms thick. (Column 2 lines 48-49)

Hatwar et al. teach recording at a wavelength of 780 nm. (Column 2 line 30)

The differences between Hatwar et al. and the present claims is that utilizing a single alloy target to deposit the alloy film is not discussed and the wavelength utilized for recording is not discussed.

Takeoka et al. teach depositing a metal layer of gold (Au), platinum (Pt), palladium (Pd), rhodium (Rh), indium (Ir), copper (Cu), nickel (Ni), cobalt (Co), iron (Fe), manganese (Mn), chromium (Cr), vanadium (V), titanium (Ti), zirconium (Zr), niobium (Nb) and aluminum (Al) as well as silver. These metals may be used singly or ***as alloys of two or more components.*** It is particularly desirable to use noble metals such as gold, silver, platinum, palladium, rhodium and iridium or alloys of these metals. These metals may be deposited by means of vacuum deposition, electron beam deposition or ***sputtering***, ***using them as a target*** and argon gas for the plasma. (Column 7 lines 52-68)

The motivation for depositing from a target containing the metals (i.e. them) is that it allows for depositing a layer comprised of that alloy target. (Column 7 lines 52-68)

As to the specific range of compositions and thicknesses, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the portion of the prior art's range which is within the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results, see In re Aller, et al., 105 U.S.P.Q. 233.

Ohno et al. suggest that the wavelength for recording/retrieving is at a level of from 630 to 660 nm. (Column 19 lines 8-10)

The motivation for operating at the wavelength of from 630 to 660 nm is that it allows for recording/retrieving information. (Column 19 lines 8-10)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Hatwar et al. by utilizing a single target as taught by Takeoka et al. and to have utilized a wavelength of from 630 to 660 nm as taught by Ohno et al. because it allows for depositing an alloy layer and allows for recording/retrieving information.

(11) Response to Argument

In response to the argument that the Examiner misconstrued In re Aller in determining if the disclosed wavelength of Hatwar could be routinely modified to arrive at the claimed wavelength, it is argued that In Re Aller was not relied upon to teach from Hatwar that the wavelength could be modified. In re Aller was relied upon to teach the range of compositions and thicknesses required by Appellant's claims. Ohno was relied upon to teach a range of wavelengths that can be utilized for recording and/or retrieving information.

In response to the argument that one of ordinary skill in the art would not be led to make that alloy from Takeoka et al. because there is no teaching on which elements to chose, it is argued that the primary reference to Hatwar clearly teach a which elements to chose from when forming a film as a reflective layer. Specifically Hatwar teach selecting a silver-palladium-copper alloy. Takeoka et al. was relied upon to suggest sputtering these elements from a single target.

Takeoka et al. state that alloys of metals can be sputtered from a target using the metals as the target. (See Takeoka and Hatwar et al. discussed above)

In response to the argument that one of ordinary skill in the art would not be lead to chose a specific composition from Takeoka et al. because there is no teaching of compositions, it is argued that the primary reference to Hatwar clearly teach a range of compositions to chose from. Specifically having palladium present in an amount less than 15 atomic % and having copper present in an amount of less than 30 atomic % with the remainder silver. Takeoka et al. was relied upon to suggest sputtering these elements from a single target. Takeoka et al. state that alloys of metals can be sputtered from a target using the metals as the target. (See Hatwar and Takeoka et al. discussed above)

In response to the argument that one would not look to Takeoka to form films having a particular thickness, it is argued that the primary references to Hatwar et al. teach depositing films having a thickness of 1000 Angstroms and that Takeoka was relied upon to teach sputtering from a single target. (See Takeoka discussed above)

In response to the argument that there is no indication from Takeoka to choose the precise alloy composition, it is argued that the primary reference to Hatwar et al. suggest the precise alloy composition required. Takeoka simply suggest that a single alloy target can be sputtered to form an alloy film on a substrate. (See Hatwar et al. and Takeoka discussed above)

In response to the argument that there is no indication that Hatwar's alloy composition can be sputtered via the same technique as Takeoka, it is argued that Hatwar et al. teach the

required alloy composition required in the film which is co-sputtered from targets of silver and palladium and/or copper and that Takeoka teach that it would be obvious to sputter from a single alloy target to produce alloy films. (See Takeoka and Hatwar et al. discussed above)

In response to the argument that Hatwar et al. teach away from the required composition because Hatwar et al. teach large proportions of Pd which appellant's point out as undesirable because it may increase the amount of hydrogen contamination, it is argued that Appellant's specification on page 10 (which Appellant relies on in their brief for support) teach a large amount of Pd in use is resistant to chlorine and sulfur contamination and may occlude well and activate hydrogen. The amount of undesirable palladium is not highlighted in appellant's specification and appellant's fail to show that having more or less palladium is detrimental to the layer. Therefore one would not be led away from utilizing the entire range disclosed by Hatwar et al. (See Hatwar et al. discussed above)

In response to the argument that Hatwar et al. teach away from the required composition because Hatwar et al. teach increasing palladium to improve the corrosion resistance at the expense of reflectivity whereas Appellant's desire to balance increased reflectivity at the expense of durational stability, as discussed above Appellant' specification does not highlight the undesirable amount of palladium to be utilized and does not teach that utilizing more or less palladium is detrimental to the layer. (See Hatwar et al. discussed above)

In response to the argument that one would not be motivated to look at Takeoka simply for sputtering techniques because the artisan would not have a clear understanding of how the

materials work, how they will be deposited and whether they will adhere to the substrate, it is argued that one would be motivated to look to Takeoka because it allows for deposition from an alloy target to produce alloy films which Hatwar et al. desire for depositing their alloy composition films. (See Takeoka and Hatwar et al. discussed above)

In response to the argument that Ohno does not teach utilizing wavelength to combat reflectance, it is argued that Ohno teach irradiating an information recording layer in the range of 630 to 660 nm which is required by Appellant's claims. Since Ohno teach the wavelength in the range of Appellant's claims the reflectance would be combated. (See Ohno discussed above)

In response to the argument that Ohno's disclosure wavelength will provide no indication that the wavelength will impart a sufficient quantum of energy to achieve bubbling in the recording material of Takeoka, it is argued that Ohno's wavelength teaching was not relied upon to teach bubbling in a recording material but was relied upon to teach recording or retrieval in a recording medium as taught by Hatwar et al. Takeoka was relied upon to teach sputtering an alloy target to form an alloy layer. (See Takeoka, Hatwar et al. and Ohno discussed above)

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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RM

December 6, 2001

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